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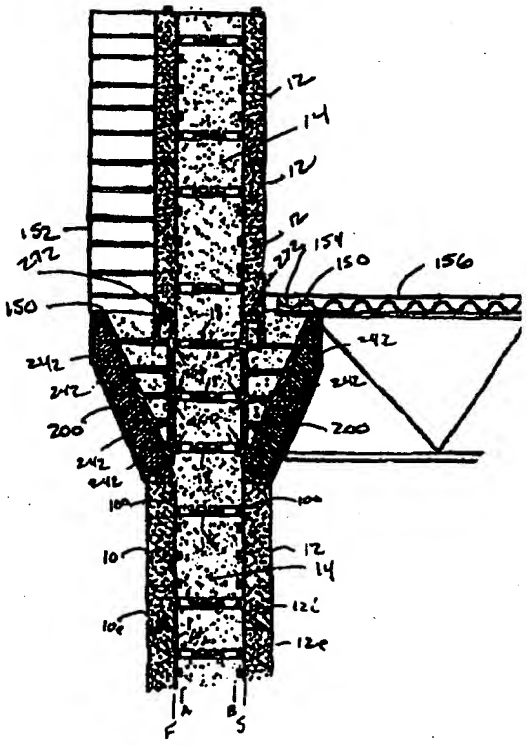
(54) Title: CONCRETE FORM SYSTEM AND METHOD

(57) Abstract

A method and system for forming concrete walls, blocks and other components. More particularly to components of concrete form systems and methods of using the form systems. The side panels (10, 12) of the forms have a web member (16) embedded therein. A connector link (400) joins two or more connectors (18) spanning between two side panels of the forms to create a form cavity of extended incremental width demension. A ledge assembly (150) provides a bearing surface for supporting a flooring system. A corner web member (320) is utilized for corner side panels (310, 312) of the concrete form system.



What is claimed is:

1. An insulated concrete form system, comprising:

a) two longitudinally-extending side panels, each side panel having an interior surface and an opposed exterior surface, wherein a portion of the interior surface of one side panel faces a portion of the interior surface of said other side panel, and wherein said interior surfaces are spaced apart from each other so that a cavity is formed;

b) at least one web member partially disposed and integrally formed within each said side panel so that a portion of each of said web members extends through the respective interior surfaces thereof, each said web member comprising:

i) an end plate having a top surface and an opposing bottom surface;

ii) a plurality of attachment couplings formed from a portion of said web member that extend through the interior surface of said side panel, said attachment couplings of said member disposed within the cavity between said side panels and spaced apart from the interior surface of said side panel;

iii) a plurality of support struts extending from said end plate to said attachment couplings, each said support strut having a proximal end, a distal end and a first longitudinal-length therebetween, wherein the proximal end of each support strut is connected to the top surface of said end plate and the distal end of each support strut is connected to one said attachment coupling; and

c) a plurality of connectors disposed within the cavity between said side panels, each said connector having opposed ends and a second longitudinal-length extending therebetween, the ends of said connector of a shape to complementarily and removeably engage one said attachment coupling of two respective web members, wherein the end plate and the proximal end of each support strut are integrally formed within said side panel to be embedded therein.

2. The insulated concrete structure of Claim 1, wherein the end plate of said web member is disposed adjacent the external side of said respective side panel.

3. The insulated concrete structure of Claim 1, wherein said attachment couplings of said web member are oriented substantially parallel to the interior surface of said side panel.

4. The insulated concrete structure of Claim 1, wherein each of said web members comprises at least one upper attachment coupling, at least one lower attachment coupling, and a median attachment coupling intermediate the upper attachment coupling and the lower attachment coupling, wherein said upper attachment coupling, lower attachment coupling, and median attachment coupling are disposed in a substantially linear relationship with each other.

5. The insulated concrete structure of Claim 4, wherein said upper attachment couplings comprises two attachment couplings spaced apart a first distance from each other, wherein said lower attachment couplings comprises two attachment couplings spaced apart the first distance, wherein the closest upper attachment coupling is spaced apart from the median attachment coupling a second distance from each other and the closest lower attachment coupling is spaced apart from the median attachment coupling the second distance from each other, wherein the second distance is greater than the first distance.

6. The insulated concrete structure of Claim 1, wherein each of said attachment couplings has a generally rectangular element adapted to be engaged with said connector, and wherein the rectangular element is substantially parallel to the end plate of said web member.

7. The insulated concrete structure of Claim 6, wherein each of said attachment couplings has a "T" shaped cross-section, wherein the rectangular element of said attachment couplings forms the top portion of the T shape.

8. The insulated concrete structure of Claim 1, further comprising a plurality of bridging members, each said bridging member extending from one said support strut to one adjacent said support strut.

9. The insulated concrete structure of Claim 8, wherein each said bridging member has a first end and a second end, the first end of each said bridging member connected near the distal end of one support strut and the second end of each bridging member connected near the distal end of one other adjacent support strut.

10. The insulated concrete structure of Claim 1, further comprising a first end strut and a second end strut, wherein said end plate further has a top edge and an opposing bottom edge, wherein said first end strut extends from the top surface of said end plate near the top edge of said end plate to near the distal end of the closest adjacent said support strut, and wherein said second end strut extends from the top surface of the end plate near the bottom edge of said end plate to near the distal end of the closest adjacent said support strut.

11. The insulated concrete structure of Claim 1, wherein each of said side panels has a plurality of web members therein, said web members in each of said side panels longitudinally spaced apart a predetermined distance from each other.

12. The insulated concrete structure of Claim 1, wherein said connector is selected from a plurality of connectors, wherein at least one of said connectors has a different length for said other connectors.

13. The insulated concrete structure of Claim 1, wherein said web member is constructed of high-density plastic.

14. An insulated concrete form system, comprising:

a) at least one side panel, said side panel having an interior surface and an opposing exterior surface;

b) at least one web member partially disposed and integrally formed within each said side panel so that a portion of each of said web members extends through the interior surface of said side panel, each said web member having at least one upper attachment coupling, at least one lower attachment coupling, and a medial attachment coupling; and

c) a plurality of connectors, each said connector having opposed ends wherein each end of said connector is of a shape to complementarily and removable engage one said attachment coupling.

15. The insulated concrete form system of Claim 14, wherein said web member further comprises an end plate and a plurality of support struts, wherein said end plate has a top surface and an opposing bottom surface, wherein said support struts have a proximal end, a distal end, and a longitudinal-length therebetween, wherein the proximal end of each support strut is connected to the top surface of said end plate and the distal end of each support strut is connected to one said attachment coupling, and wherein the end plate and the proximal end of each support strut are integrally formed within said side panel to be embedded therein.

16. The insulated concrete structure of Claim 14, wherein the end plate of said web member is disposed adjacent the external side of said respective side panel.

17. The insulated concrete structure of Claim 14, wherein said upper attachment couplings, lower attachment couplings, and median attachment coupling are disposed in a substantially linear relationship with each other, and wherein said attachment couplings are oriented substantially parallel to the interior surface of said side panel.

18. The insulated concrete structure of Claim 17, wherein said upper attachment couplings comprises two attachment couplings spaced apart a first distance from each other, wherein said lower attachment couplings comprises two attachment couplings spaced apart the first distance, wherein the closest upper attachment coupling is spaced apart from the median attachment coupling a second distance from each other and the closest lower attachment coupling is spaced apart from the median attachment coupling

the second distance from each other, wherein the second distance is greater than the first distance.

19. The insulated concrete structure of Claim 17, wherein said upper attachment couplings comprises three attachment couplings spaced apart a longitudinal length form each other, wherein said lower attachment couplings comprises three attachment couplings spaced apart the longitudinal distance, wherein the median attachment is spaced apart from the closest respective attachment coupling of the upper attachment coupling and the lower attachment coupling by a distance greater than or substantially equal to the longitudinal distance.

20. The insulated concrete structure of Claim 15, further comprising a plurality of bridging members, each said bridging member extending from one said support strut to one adjacent said support strut.

21. The insulated concrete structure of Claim 20, wherein each said bridging member has a first end and a second end, the first end of each said bridging member connected near the distal end of one support strut and the second end of each bridging member connected near the distal end of one other adjacent support strut.

22. The insulated concrete structure of Claim 20, further comprising a first end strut and a second end strut, wherein end plate further has a top edge and an opposed bottom edge, wherein said first end strut extends from the top surface of said end plate near the top edge of said end plate to near the distal end of the closest adjacent said support strut, and wherein said second end strut extends from the top surface of said end plate near the bottom edge of said end plate to near the distal end of the closest adjacent said support strut.

23. The insulated concrete structure of Claim 14, wherein said side panel has a plurality of web members therein, said web members in said side panel longitudinally spaced apart a predetermined distance from each other.

24. The insulated concrete structure of Claim 14, wherein said web member is constructed of high-density plastic.

25. A web member for a concrete form system having first and second side form panels, each side panel having an interior surface and an opposed exterior surface, the panels arranged in spaced parallel relationship with their interior surfaces facing each other, at least one web member partially disposed and integrally formed within each side panel so that a portion of the web member extends through the respective interior surfaces thereof, and at least one connector extending between and connecting the portion of two respective web members extending from the respective interior surfaces; the web member comprising:

a) an end plate having a top surface and an opposing bottom surface;

b) a plurality of attachment couplings so that a connector may be attached to said web member; and

c) a plurality of support struts extending from said end plate to said attachment couplings, each said support strut having a proximal end, a distal end and a first longitudinal-length therebetween,

wherein the proximal end of each support strut is connected to the top surface of said end plate and the distal end of each support strut is connected to one said attachment coupling, and wherein the end plate and the proximal end of each support strut are integrally formed within said side panel to be embedded therein.

26. The web member of Claim 25, wherein said end plate is oriented substantially upright.

27. The web member of Claim 25, wherein the end plate of said web member is disposed adjacent the external side of the respective side panel.

28. The web member of Claim 27, wherein at least a portion of the bottom surface of the end plate of said web member abuts the exterior surface of the side panel.

29. The web member of Claim 25, wherein the respective inner surfaces of said first and second side panels are spaced apart from each other to form a cavity therebetween, and wherein said attachment couplings of said web member are oriented substantially upright within the cavity between said first and second side panels.

30. The web member of Claim 29, wherein each of said web members comprises at least one upper attachment coupling, at least one lower attachment coupling, and a median attachment coupling intermediate the upper attachment coupling and the lower attachment coupling, wherein said upper attachment couplings, lower attachment couplings, and median attachment coupling are disposed in a substantially linear relationship with each other.

31. The web member of Claim 30, wherein said upper attachment couplings comprises two attachment couplings spaced apart a first distance from each other, wherein said lower attachment couplings comprises two attachment couplings spaced apart the first distance, wherein the closest upper attachment coupling is spaced apart from the median attachment coupling a second distance from each other and the closest lower attachment coupling is spaced apart from the median attachment coupling the second distance from each other, wherein the second distance is greater than the first distance.

32. The insulated concrete structure of Claim 30, wherein said upper attachment couplings comprises three attachment couplings spaced apart a longitudinal length form each other, wherein said lower attachment couplings comprises three attachment couplings spaced apart the longitudinal distance, wherein the median attachment is spaced apart from the closest respective attachment coupling of the upper attachment coupling and the lower attachment coupling by a distance greater than or substantially equal to the longitudinal distance.

33. The web member of Claim 25, further comprising a plurality of bridging members, each said bridging member extending from one said support strut to one

adjacent said support strut, wherein said bridging members are oriented substantially upright.

34. The web member of Claim 33, wherein each said bridging member has a first end and a second end, the first end of each said bridging member connected near the distal end of one support strut and the second end of each bridging member connected near the distal end of one other adjacent support strut.

35. The web member of Claim 33, further comprising a first end strut and a second end strut, wherein said end plate further has a top edge and an opposing bottom edge, wherein said first end strut extends from the top surface of said end plate near the top edge of said end plate to near the distal end of the closest adjacent said support strut, and wherein said second end strut extends from the top surface of the end plate near the bottom edge of said end plate to near the distal end of the closest adjacent said support strut.

36. The web member of Claim 25, wherein said web member is constructed of high-density plastic.

37. A method of fabricating a concrete structure, said method comprising the steps of:

a) erecting at least two longitudinally-extending side panels, each side panel having an interior surface and an opposed exterior surface, wherein a portion of the interior surface of one side panel faces a portion of the interior surface of said other side panel, and wherein said interior surfaces are spaced apart from each other so that a cavity is formed, each of said side panels having at least one web member patially disposed and intergrally formed therein so that a portion of each of said web members extends through the respective interior surfaces thereof, each said web member comprising:

i) an end plate having a top surface and an opposing bottom surface, wherein the end plate is integrally formed within said side panel to be embedded therein;

ii) a plurality of attachment couplings formed from a portion of said web member that extend through the interior surface of said side panel, said attachment couplings of said member disposed within the cavity between said side panels and spaced apart from the interior surface of said side panel; and

iii) a plurality of support struts extending from said end plate to said attachment couplings, each said support strut having a proximal end, a distal end and a first longitudinal-length therebetween, wherein the proximal end of each support strut is connected to the top surface of said end plate and the distal end of each support strut is connected to one said attachment coupling, and wherein the the proximal end of each support strut are integrally formed within said side panel to be embedded therein;

b) detachably attaching a connector to the attachment coupling of two opposing web members which are within opposed side panels, said connector having opposed ends and a second longitudinal-length extending therebetween, the ends of said connector of a shape to complementarily and removeably engage said attachment coupling of two respective web members; and

c) substantially filling the cavity formed between the opposing side panels to be cured therein.

38. The method of Claim 37, wherein the web member further comprises a plurality of substantially upright bridging members, a first end strut, and a second end strut, wherein each said bridging member extends from one said support strut to one adjacent said support strut, wherein each said bridging member has a first end and a second end, the first end of each said bridging member connected near the distal end of one support

strut and the second end of each bridging member connected near the distal end of one other adjacent support strut, wherein said end plate further has a top edge and an opposing bottom edge, wherein said first end strut extends from the top surface of said end plate near the top edge of said end plate to near the distal end of the closest adjacent said support strut, and wherein said second end strut extends from the top surface of the end plate near the bottom edge of said end plate to near the distal end f the closest adjacent said support strut.

39. A component of an insulated concrete form system, comprising:

a) a first corner panel having a first exterior surface and an opposing first interior surface, the first corner panel having two longitudinally-extending first side panels connected to form a substantially vertical corner panel edge in the first exterior surface;

b) a second corner panel having a second exterior surface and an opposing second interior surface, the second corner panel having two longitudinally-extending second side panels, wherein a portion of the first interior surface of said first corner panel faces a portion of the second interior surface of said other side panel, and wherein said first interior surface and said second interior surface are spaced apart from each other so that a cavity is formed;

c) bridging means for connecting said first corner panel to said second corner panel; and

d) a corner web member partially disposed and integrally formed within said first corner panel so that a portion of said corner web member extends through the first interior surface of said first corner panel into the cavity.

40. The component of Claim 39, wherein said bridging means comprises:

a) at least one web member partially disposed and integrally formed within each of said first corner panel and said second corner panel, wherein the portion of said web members that extend through the respective first interior surface and second interior surface of said first corner panel and

second corner panel forms an attachment coupling thereon, said attachment couplings of said respective web members disposed within the cavity between said first and second corner panels and spaced apart from the respective first interior surface and second interior surface of said first and second corner panels; and

b) a connector, disposed within the cavity between said first corner panel and second corner panel, having opposed ends and a length therebetween, the ends of said connector of a shape to complementarily and removeably engage the attachment coupling of two respective web members.

41. The component of Claim 39, wherein the corner web member comprises:

a) a corner flange member, said corner flange member having an upper surface and a lower surface, and wherein said corner flange member has a longitudinally-extending first leg connected to a longitudinally-extending second leg to form a corner flange edge in the upper surface of said corner flange member;

b) a bridging member, said bridging member having a top edge and an opposing bottom edge; and

c) a plurality of support struts, each support strut having a proximal end, a distal end, and a longitudinal-length therebetween, wherein the proximal end of each support strut is connected to the lower surface of said corner flange member and the distal end of each support strut is connected to the top edge of said bridging member,

wherein said corner flange member and the proximal end of each support strut are integrally formed within said first side panel to be embedded therein.

42. The component of Claim 41, wherein said corner flange member is disposed adjacent the first exterior surface of said first corner panel.

43. The component of Claim 42, wherein said corner flange member is shaped so that the upper surface of said corner flange member is substantially parallel to the exterior surface of said first corner panel.

44. The component of Claim 43, wherein said first corner panel generally has an "L"shape in cross-section, and wherein said corner flange member generally has an "L" shape in cross-section.

45. The component of Claim 41, wherein said support struts are spaced a predetermined distance apart from each other.

46. The component of Claim 41, wherein said corner flange member has a first width, wherein the top edge of said bridging member has a second width, wherein the second width is less than the first width, and wherein the proximal end of each support strut has a width approximate to the first width and the distal end of each support strut has a width approximate to the second width so that each support strut tapers from the proximal end to the distal end of said support strut.

47. The component of Claim 41, further comprising a support flange member having a top surface, wherein the top surface of said support flange member is connected to the bottom edge of said bridging member, and wherein said support flang member is disposed within the cavity between said first corner panel and said second corner panel and spaced apart from the first interior surface of the first corner panel.

48. The component of Claim 47, wherein the top surface of said support flange member is oriented substantially parallel to the first interior surface of said first corner panel.

49. The component of Claim 47, wherein said support flange generally has an "L" shape in cross-section.

50. The component of Claim 39, wherein the corner web member is construct d of high-density plastic.

51. A corner web member for an insulated concrete form system having a corner panel having an exterior surface and an opposing interior surface, the corner panel having two longitudinally-extending side panels connected to form a substantially vertical corner panel edge in the exterior surface of the corner panel, the corner web member comprising:

a) a corner flange member, said corner flange member having an upper surface and a lower surface, and wherein said corner flange member has a longitudinally-extending first leg connected to a longitudinally-extending second leg to form a corner flange edge in the upper surface of said corner flange member;

b) a bridging member, said bridging member having a top edge and an opposing bottom edge; and

c) a plurality of support struts, each support strut having a proximal end, a distal end, and a longitudinal-length therebetween, wherein the proximal end of each support strut is connected to the lower surface of said corner flange member and the distal end of each support strut is connected to the top edge of said bridging member.

wherein said corner web member is partially disposed and integrally formed within the corner panel so that a portion of said corner web member extends through the interi r surface of said corner panel, and wherein said corner flange member and the proximal end of each support strut are integrally formed within said first side panel to be embedded therein.

52. The component of Claim 51, wherein said support struts are spaced a predetermined distance apart from each other.

53. The component of Claim 51, wherein said corner flange member has a first width, wherein the top edge of said bridging member has a second width, wherein the second width is less than the first width, and wherein the proximal end of each support

strut has a width approximate to the first width and the distal end of each support strut has a width approximate to the second width so that each support strut tapers from the proximal end to the distal end of said support strut.

54. The component of Claim 51, wherein said corner flange member is disposed adjacent the exterior surface of said corner panel.

55. The component of Claim 54, wherein the corner flange edge of said corner flange member is disposed substantially parallel to the corner panel edge of said first corner panel.

56. The component of Claim 54, wherein said corner flange member is shaped so that the upper surface of said corner flange member is substantially parallel to the exterior surface of said first corner panel.

57. The component of Claim 54, wherein said corner panel and said corner flange member generally have an "L" shape in cross-section.

58. The component of Claim 51, further comprising a support flange member having a upper surface, wherein the upper surface of said support flange member is connected to the bottom edge of said bridging member, wherein said support flange member is spaced apart from the interior surface of the corner panel.

59. The component of Claim 58, wherein said support flange member is oriented substantially upright.

60. The component of Claim 59, wherein said support flange has an "L" shape.

61. A corner web member for an insulated concrete form system having a corner panel having an exterior surface and an opposing interior surface, the corner pan l having two longitudinally-extending side panels connected to form a substantially

vertical corner panel edge in the exterior surface of the corner panel, the corner web member comprising:

a) a corner flange member, said corner flange member having an upper surface and a lower surface, and wherein said corner flange member has a longitudinally-extending first leg connected to a longitudinally-extending second leg to form a corner flange edge in the upper surface of said corner flange member;

b) a bridging member, said bridging member having a top edge and an opposing bottom edge;

c) a plurality of support struts, each support strut having a proximal end, a distal end, and a longitudinal-length therebetween, wherein the proximal end of each support strut is connected to the lower surface of said corner flange member and the distal end of each support strut is connected to the top edge of said bridging member; and

d) a support flange member having a upper surface, wherein the upper surface of said support flange member is connected to the bottom edge of said bridging member,

wherein said corner web member is partially disposed within the corner panel so that a portion of said corner web member extends through the interior surface of said corner panel, wherein said corner flange member and the proximal end of each support strut are integrally formed within said first side panel to be embedded therein, and wherein said support flange member is spaced apart from the interior surface of the corner panel.

62. The component of Claim 61, wherein said support struts are spaced a predetermined distance apart from each other.

63. The component of Claim 62, wherein said corner flange member has a first width, wherein the top edge of said bridging member has a second width, wherein the second width is less than the first width, and wherein the proximal end of each support strut has a width approximate to the first width and the distal end of each support strut

has a width approximate to the second width so that each support strut tapers from the proximal end to the distal end of said support strut.

64. The component of Claim 61, wherein said corner flange member is disposed adjacent the exterior surface of said corner panel,.

65. The component of Claim 64, wherein the corner flange edge of said corner flange member is disposed substantially parallel to the corner panel edge of said first corner panel, and wherein said corner flange member is shaped so that the upper surface of said corner flange member is substantially parallel to the exterior surface of said first corner panel.

66. The component of Claim 65, wherein said support flange member is oriented substantially upright.

67. The component of Claim 61, wherein said corner panel, said corner flange member, and said support flange generally have an "L" shape in cross-section.

68. A method of fabricating a concrete structure, the method comprising the steps of:

a) erecting a first corner panel having a first exterior surface, an opposing first interior surface, and a corner web member, the first corner panel having two longitudinally-extending first side panels connected to f rm a substantially vertical corner panel edge in the first exterior surface, said corner web member of said first corner panel partially disposed within said first corner panel so that a portion of said corner web member extends through the first interior surface of said first corner panel;

b) erecting a second corner panel having a second exterior surface and an opposing second interior surface, the second corner panel having two longitudinally-extending second side panels, wherein a portion of the first interior surface of said first corner panel faces a portion of the

second interior surface of said other side panel, and wherein said first interior surface and said second interior surface are spaced apart from each other so that a cavity is formed, each of said first and second corner panels having at least one web member disposed partially within each said side panel so that a portion of each of said web members extends through the respective first and second interior surfaces thereof, wherein the portion of said web members that extend through the respective first interior surface and second interior surface of said first corner panel and second corner panel forms an attachment coupling thereon, said attachment couplings of said respective web members disposed within the cavity between said first and second corner panels and spaced apart from the respective first interior surface and second interior surface of said first and second corner panels;

c) detachably attaching a connector to the attachment coupling of two opposing web members, said connector having opposed ends of a shape to complementarily and removably engage the attachment coupling of two respective web members; and

d) substantially filling the cavity formed between the opposing first and second corner panels to be cured therein.

69. A method of constructing a concrete structure having a termite infestation detection surface, the method comprising the steps of:

a) providing two longitudinally-extending side panels, each of said side panels having an exterior surface, an opposed interior surface, and a web member partially disposed and integrally formed within each said side pane so that a portion of said web member extends through the respective interior surface thereof, wherein the portion of said web member that extends through the interior surface of said side panels forms an attachment coupling thereon, and wherein said attachment couplings are spaced apart from the interior surfaces of said side panels;

b) providing a longitudinally-extending support panel, said support panel having a support panel int rior surface and a first width, wherein the first width is less than the width of said side panel;

c) detachably securing said longitudinally-extending support panel to the exterior surface of one of said side panels so that the interior surface of said support panel overlies the exterior surface of said side panel;

d) removing a longitudinally-extending strip of said side panel having the secured support panel so that a longitudinally-extending portion of the interior surface of said side panel is exposed, wherein the strip has a width less than the first width of said support panel;

e) positioning said side panels so that a portion of the interior surface f said side panel having the secured support panel and a portion of the exposed interior surface of the secured support panel faces a portion of, and are laterally spaced therefrom, the interior surface of the other side panel to form a cavity therebetween, anc wherein said attachment couplings of said side panels are disposed in opposition within the cavity between the side panels;

f) detachably attaching a connector to the attachment coupling of two web members which are within the opposed side panels, said connector having opposed ends of a shape to complementarily and removably engage the attachment coupling of two respective members;

g) pouring concrete into the cavity formed between said side panels to be cured therein; and

h) removing said support panel from the exterior surface of said side panel after the concrete has cured to expose the surface of the cured concrete, wherein the exposed surface extends the longitudinal length of the side panel and forms the termite infestation detection surface so that termites are forced to traverse the termite infestation detection surface to reach the portion of the concrete structure above the detection surface and may be thereby visually detected.

70. An insulated concrete form system, comprising:

a) first and second longitudinally-extending side panels, each side panel having an exterior surface and an opposed interior surface, wherein a portion of the interior surface of said first side panel faces a portion of the interior surface of said second side panel, wherein said interior

surfaces are spaced apart from each other so that a cavity is formed therebetween;

a) a plurality of web members, at least one said web member partially disposed and integrally formed within each of said first corner panel and said second corner panel, wherein the portion of said web members that extends through the respective interior surfaces of said first and second side panels forms an attachment coupling thereon, wherein the attachment couplings of said respective web members are disposed within the cavity between said first and second corner panels and spaced apart from the respective first interior surface and second interior surface of said first and second corner panels;

b) at least two connectors, disposed within the cavity between said side panels, each connector having a first end, an opposed second end, a first length extending therebetween, and a pair of opposed connector couplings, wherein one connector coupling is formed in the first end of the connector and the other connector coupling is formed in the second end of the, and wherein the connector coupling of the first end of one connector is adapted to engage one attachment coupling of said first side panel and the connector coupling of the first end of the second connector is adapted to engage one attachment coupling of said second side panel so that the connector couplings of the second ends of the two connectors are spaced apart from, and oppose, each other within the cavity; and

c) a connector link, disposed within the cavity between two opposing connectors, having a proximal end having a first link coupling, a distal end having a second link coupling, and a second length extending therebetween, wherein the first link coupling of said connector link is adapted to engage the connector coupling of the second end of one connector and the second link coupling of said connector link is adapted to engage the connector coupling of the second end of one other opposing connector.

71. The insulated concrete form system of Claim 1, wherein the attachment couplings are oriented substantially upright within the cavity between said side panels, wherein the opposing attachment couplings of said web members are longitudinally spaced apart a predetermined distance from each other, and wherein said connector link is operatively engaged to two said connectors operatively engaged to two opposing attachment couplings to span the predetermined distance between the attachment couplings.

72. The insulated concrete from system of Claim 70, wherein said connector link is selected from a plurality of connector links, wherein at least one connector link has a different length for said other connector links.

73. The insulated concrete form system of Claim 72, wherein said connectors are selected from a plurality of connectors, wherein each connector has a different length from said other connectors.

74. The insulated concrete from system of Claim 70, wherein said connector and said connector link are constructed of high-density plastic.

75. A connector link for use in an insulated concrete form system having first and second side panels and at least two connectors, each side panel having an exterior surface, an opposed interior surface, and at least one attachment coupling, the panels arranged in spaced parallel relationship with their interior surfaces and attachment couplings facing each other so that a cavity is formed therebetween, each connector having a first end and a distal second end, a first length extending therebetween, and a pair of opposed connector couplings, one connector coupling formed in the first end and the other connector coupling formed in the second end, so that the each connector coupling of each connector is adapted to engage one attachment coupling of the side panel, the connector link comprising:

a) a proximal end having a first link coupling for engagement to the connector coupling of one connector of the concrete form system;

b) a distal end having a second link coupling for engagement to the connector coupling of one other connector of the concrete form system; and

c) a substantially rigid body portion extending between said proximal end and said distal end of said connector link,

wherein the connector link is operatively engaged to the connectors to structurally connect one attachment coupling on one side panel to one other attachment coupling on the other side panel.

76. The connector link of Claim 75, wherein said connector link is selected from a plurality of connector links, wherein at least one connector link has a different length for said other connector links.

77. The connector link of Claim 75, wherein said connector link is constructed of high-density plastic.

78. The connector link of Claim 75, wherein the connector coupling of the connector defines a rectangularly shaped notch having a channel shaped slot, and wherein each of said first link coupling and said second link coupling of said connector link has a generally rectangular element adapted for sliding engagement with the notch within the connector coupling.

79. The connector link of Claim 78, wherein said body portion of said connector link is formed from a rib extending between the rectangular elements of said first link coupling and said second link coupling, and wherein the rib is adapted for sliding engagement within the slot in the connector coupling.

80. The connector link of Claim 79, wherein the rectangular elements of said first link coupling and said second link coupling are generally parallel to each other, and wherein the rib of said connector link extends generally perpendicular therebetween to connect the approximate mid-points thereof so that said first link coupling and said

second link coupling are generally "T" shaped in cross-section and so that said first link coupling, said second link coupling and said body portion are generally "I" shaped.

81. The connector link of Claim 79, wherein the rib of said connector link has a first face and an opposing second face, wherein the connector link further comprises a plurality of recesses, each recess disposed adjacent each rectangular element of said first link coupling and said second link coupling, wherein each recess is adapted to engage a complementarily shaped lug in each of the connector couplings of the connectors of the concrete from system so that said connector link may be positively locked to the connectors to prevent disengagement during a concrete pour within the cavity.

82. The connector link of Claim 79, wherein said rib of said connector link further comprises a base flange member connected to the rectangular elements of said first and second link couplings and the rib of said body portion, wherein said base flange member lies in a plane generally perpendicular to the rectangular elements and the rib.

83. The connector link of Claim 82, wherein said base flange member has a generally rectangular shape.

84. A method of constructing a concrete structure, comprising the steps of:

a) erecting a first and second side panels, each side panel having an exterior surface, an opposed interior surface, and at least one attachment coupling, the panels arranged in spaced parallel relationship with their interior surfaces and attachment couplings facing each other so that a cavity is formed therebetween;

b) providing a first and a second connector, each connector having a first end, a distal second end, a first length extending therebetween, and a pair of opposed connectors couplings, wherein one connector coupling is formed therein the first end and the other connector coupling is formed therein the second end;

c) engaging the connector coupling of the first end of the first connector to one attachment coupling of the first side panel;

d) engaging the connector coupling of the first end of the second connector to one attachment coupling of the second side panel;

e) attaching a connector link to the connector coupling of the second end o the first connector and to the connector coupling of the second end of the second connector, each connector link having a proximal end having a first link coupling for engagement to the connector coupling , a distal end having a second link coupling for engagement to the connector coupling, and a substantially rigid body portion extending between said proximal end and said distal end of said connector link; and

f) pouring concrete into the cavity formed between said side panels to be cured therein.

85. An insulated concrete form structure, comprising:

a) a longitudinally-extending first side panel having an interior surface, an opposed exterior surface, and a plurality of first attachment couplings spaced apart from the interior surface of said first side panel, wherein the interior surface of said first side panel is generally aligned in a first plane;

b) a ledge assembly comprising a ledge panel having an ledge interior surface and an opposed ledge exterior surface, and a plurality of ledge attachment couplings spaced apart from the ledge interior surface of said ledge panel, wherein a portion of the interior surface of the first side panel faces a portion of the ledge interior surface of the ledge panel, wherein the interior surface of the first side panel is spaced apart from the ledge interior surface of the ledge panel so that a ledge cavity is formed therebetween, wherein said attachment couplings and said ledge attachment couplings are disposed in opposition within the ledge cavity, and wherein said ledge panel extends at an acute angle from the first plane in the direction of the ledge exterior surface of said ledge panel; and

c) a plurality of connectors, disposed within the ledge cavity between said first side panel and said ledge panel, each connector having opposed ends of a shape to complementarily and removably engage one first attachment coupling of said first side panel and one ledge attachment coupling of said ledge assembly.

86. The insulated concrete structure of Claim 85, wherein said connector is selected from a plurality of connectors, wherein at least one of said connectors has a different length from said other connectors.

87. The insulated concrete structure of Claim 85, wherein said ledge assembly further comprises a plurality of ledge web members partially disposed and integrally formed within said ledge panel so that a portion of each of the ledge web members extends through the ledge interior surface thereof, and wherein each ledge attachment coupling is formed from the portion of one ledge web member extending outward of said ledge panel into the ledge cavity.

88. The insulated concrete structure of Claim 87, wherein each of said ledge web members has three spaced-apart ledge attachment couplings, wherein said ledge attachment couplings are disposed in a substantially linear relationship with each other.

89. The insulated concrete structure of Claim 88, wherein said ledge attachment couplings are equally spaced-apart.

90. The insulated concrete structure of Claim 87, wherein said ledge attachment couplings of said ledge assembly are parallel to the first plane of the interior surface of said first side panel.

91. The insulated concrete structure of Claim 90, wherein said attachment couplings of said first side panel are parallel to the first plane of the interior surface of said first side panel so that the ledge attachment couplings and the attachment couplings of the first side panel are spaced apart a predetermined distance.

92. The insulated concrete structure of Claim 91, wherein said connector has a longitudinal length extending between the opposed ends so that a predetermined sized connector can be used to operatively engage one said attachment coupling and one said opposing ledge attachment coupling.

93. The insulated concrete structure of Claim 87, wherein said ledge assembly and said connectors are constructed of high-density plastic.

94. The insulated concrete structure of Claim 87, wherein said ledge assembly defines a ledge aperture therein of a size to complementarily receive a first longitudinally-extending re-bar therein.

95. The insulated concrete structure of Claim 90, further comprising a plurality of web members, wherein at least one web member is partially disposed and integrally formed within said first side panel so that a portion of each of said web members extends through the interior surface of the first side panel, and wherein each attachment coupling is formed from the portion of the web member extending from said first side panel.

100. A method of constructing an concrete structure, comprising the steps of:

a) erecting a longitudinally-extending first side panel having an interior surface, an opposed exterior surface, and a plurality of first attachment couplings spaced apart from the interior surface of said first side panel, wherein the interior surface of said first side panel is generally aligned ir a first plane;

b) erecting a ledge assembly comprising a ledge panel having an ledge interior surface and an opposed ledge exterior surface, and a plurality of ledge attachment couplings spaced apart from the ledge interior surface of said ledge panel, wherein a portion of the interior surface of the first side panel faces a portion of the ledge interior surface of the ledge panel, wherein the interior surface of the first side panel is spaced apart from the ledge interior surface of the ledge panel so that a ledge cavity is

formed therebetween, wherein said attachment couplings and said ledge attachment couplings are disposed in opposition within the ledge cavity, and wherein said ledge panel extends at an acute angle from the first plane in the direction of the ledge exterior surface of said ledge panel;

c) engaging a plurality of connectors between the attachment couplings of the first side panel and the ledge attachment couplings of the ledge assembly, each connector having opposed ends of a shape to complementarily and removably engage one attachment coupling and one ledge attachment coupling; and

d) substantially filling the ledge cavity between said first panel and said ledge panel with concrete.

101. A concrete form system comprising:

(a) a first longitudinally-extending side panel having an interior surface, an opposed exterior surface, and a plurality of first attachment couplings generally aligned along a first plane adjacent the interior surface of said first side panel;

(b) a second longitudinally-extending side panel having an interior surface, an opposed exterior surface, and a plurality of second attachment couplings generally aligned along a second plane adjacent the interior surface of said second side panel, wherein a portion of the interior surface of said first side panel faces and is spaced apart from a portion o the interior surface of said second side panel to define a panel cavity therebetween;

(c) a ledge assembly coupled to said second side panel, said ledge assembly comprising a plurality of ledge attachment coupling points and a ledge panel having a ledge interior surface, wherein said ledge attachment points of said ledge assembly are generally aligned along the second plane, wherein said ledge panel extends at an acute angle from the second plane in the direction of the exterior surface of said second side panel, wherein a portion of the ledge interior surface is spaced-apart from and confronts a portion of the interior surface of the first side panel

to define a ledge cavity therebetween, and wherein the ledge attachment couplings and at least one first attachment couplings of said first side panel are disposed within the ledge cavity;

(d) a plurality of connectors disposed within the ledge cavity between said first side panel and said ledge assembly, said connectors removably engaged between the first attachment couplings and first ledge attachment couplings.

102. The concrete form system of Claim 101, wherein said connectors have opposed ends and a longitudinal length extending therebetween, the ends of said connector of a shape to complementarily and removably engage the first attachment coupling and the ledge attachment coupling.

103. The concrete form system of Claim 101, wherein said connector is selected from a plurality of connectors, wherein at least one of said connectors has a different length from said other connectors.

104. The concrete form system of Claim 101, wherein said ledge assembly further comprises a plurality of ledge web members partially disposed and integrally formed within said ledge panel so that a portion of each of said ledge web members extends through the ledge interior surface of said ledge panel, wherein each ledge attachment coupling is formed from the portion of one ledge web member extending outward of said ledge panel into the ledge cavity.

105. The concrete form system of Claim 104, wherein said ledge assembly is are constructed of high-density plastic.

106. The concrete form system of Claim 104, further comprising a first longitudinally-extending re-bar, wherein said ledge web member defines a ledge aperture therein of a size to complementary receive the first re-bar therein.

107. The concrete form system of Claim 106, further comprising a second longitudinally-extending re-bar, wherein said connector defines a connector aperture therein of a size to complementary receive the second re-bar therein, the form system further comprising a hook-shaped re-bar form, said re-bar form set on said first re-bar and said second re-bar so that said re-bar form is disposed within the ledge cavity and the panel cavity to provide structural support to the concrete form system.

108. The concrete form system of Claim 104, wherein each of said ledge web members comprises three spaced-apart ledge attachment points, wherein the ledge attachment couplings are disposed in a substantially linear relationship with each other.

109. The concrete form system of Claim 108, wherein said ledge attachment couplings are equally spaced-apart.

110. The concrete form system of Claim 104, further comprising a plurality of web members, wherein at least one web member is partially disposed and integrally formed within each of said first side panel and said second side panel so that a portion of each of said web members extends through the respective interior surfaces of said first side panel and said second side panel, and wherein each first attachment coupling is formed from the portion of one web member extending from said first side panel and each second attachment coupling is formed from the portion of one web member extending from said second side panel.

111. The concrete form system of Claim 110, wherein said ledge attachment couplings of said ledge web members of said ledge assembly are longitudinally spaced apart a predetermined distance from each other, and wherein said attachment couplings of said web members in each of the first and second side panels are longitudinally spaced apart from each other by the predetermined distance.

112. A ledge assembly for a concrete form system having longitudinally-extending side panels, each side panel having an exterior surface and an opposed interior surface,

a portion of the interior surface of one side panel facing and spaced apart from a portion of the interior surface of the other side panel, said ledge assembly comprising:

(a) a ledge panel having a lower edge, an upper edge and a generally planar panel body having an interior surface extending therebetween;

(b) at least one ledge web member, each ledge web member having an embedded portion embedded within said panel body, and an exposed portion extending outward of the interior surface of said panel body; and

(c) a plurality of attachment couplings arranged in a generally linear array along the exposed portion of each ledge web member, said generally linear array of attachment couplings forming an acute angle with said generally planar panel body.

113. The ledge assembly of Claim 112, wherein said lower edge of said ledge panel comprises a first coupling for engaging a lower side panel component of the concrete form system.

114. The ledge assembly of Claim 113, wherein said ledge web member comprises a second coupling for engaging an upper side panel component of the concrete form system.

115. The ledge assembly of Claim 112, wherein said ledge assembly is formed from a high-density plastic.

116. The ledge assembly of Claim 112, wherein the ledge attachment couplings of said ledge web member are oriented substantially upright.

117. The ledge assembly of Claim 116, wherein each of said ledge web members comprises three spaced-apart attachment couplings.

118. The ledge assembly of Claim 117, wherein said ledg attachment couplings are equally spaced-apart.

119. The ledge assembly of Claim 117, wherein said ledge web member defines a ledge aperture therein of a size to complementary receive a first longitudinally-extending re-bar therein.

120. A method of fabricating a concrete structure, said method comprising the steps of:

(a) erecting a first side panel comprising an interior surface, an exterior surface, and a plurality of first attachment couplings generally aligned along a first plane adjacent said interior surface of said first side panel;

(b) erecting a second side panel comprising an interior surface, an exterior surface, and a plurality of second attachment couplings generally aligned along a second plane adjacent said interior surface of said second sid panel, said interior surfaces of said first side panel and said second side panel confronting one another and separated a distance to define a panel cavity therebetween;

(c) installing a ledge assembly comprising a ledge panel and a plurality of ledge attachment couplings onto said second side panel, wherein a portion of the interior surface of the first side panel faces, and is spaced apart from, a portion of the ledge interior surface of the ledge panel so that a ledge cavity is formed therebetween, wherein said first attachment couplings and said ledge attachment couplings are disposed in opposition within the ledge cavity, and wherein said ledge panel extends at an acute angle from said second plane in the direction of the exterior surface of said second side panel;

(d) engaging a plurality of connectors between attachment couplings aligned along said first plane and opposing attachment couplings aligned along said second plane, each connector having opposed ends of a shape to complementarily and removably engage two opposing attachment couplings.

(e) substantially filling the panel cavity between said first and second side panels and the ledge cavity between said second side panel and said ledge panel with concrete.